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## ABSTRACT

This is a report on a one-year demonstration of the Appalachia Educational Laboratory's Home-Oriented Preschool Education Program conducted in Kanawha County, West Virginia, by the Kanawha County Board of Education. It involves 150 children, ages 3, 4, and 5 from a rural isolated section who watched 170 daily television lessons broadcast over a commercial station, participated in a weekly group session of 10 to 15 children in a mobile classroom facility under the direction of a certified teacher, and received a weekly home visit from a paraprofessional teacher. Evaluation included overall effectiveness to the program, relation of student achievement to areas of program emphasis and an assessment of parents' attitude toward the program. Pre- and post-testing revealed that, although the demonstration did not produce significant changes in IQ in comparison with the control group, such changes were obtained in the areas of pre-reading skills and in the overall achievement of the program's objectives. Parental attitude toward the program was highly positive. The successful operation of this demonstration of the HOPE Program by the Kanawha County Board of Education indicates that comparable results may be obtained when the program is replicated by school districts. (Author/DJ)



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Final Report

Contact No. OEC-0-71-3230 (519)

DEMONSTRATION OF HOME-ORIENTED  
EARLY CHILDHOOD EDUCATION PROGRAM

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## I. INTRODUCTION

The Appalachia Educational Laboratory has developed a system for bringing an effective early childhood education program into the rural, isolated regions of this nation where 3-, 4- and 5-year-old children never have had the opportunity for such an experience.

The Home-Oriented Preschool Education Program has been designed specifically to combat the isolation imposed by typical characteristics of rural Appalachia and many other areas--rugged terrain, poor roads, scattered population, and a low tax base.

The developmental program has proved its worth in an eight-county area of Southern West Virginia. There, in a comprehensive three-year field test, youngsters from ages 3 to 5 were provided a running start on first grade at less than half the per pupil cost of keeping a child in conventional kindergarten.

This new approach to early childhood education was developed with three interlocking components: a daily 30-minute televised lesson in the home; individual guidance through a weekly visit to the home by a paraprofessional who works with the parent and child and delivers and explains materials carefully geared to the televised lessons for that week; and a mobile classroom, which takes the place of seven conventional classrooms and serves the needs of 12 to 15 children as they gather once each week for an hour and a half.

According to Dr. Benjamin Bloom, a child develops 80 per cent of his mature intelligence between conception and age 8--one-half by the time he is 4. These are the years rural Appalachian children are most sheltered from outside influences. Thus the AEL program, designed to reach children during these critical years, provides the opportunity to broaden the experiences of the young child--mostly within the security of his home.

Summative evaluation designed to assess the overall effectiveness of the program was performed. Children in the field test sample were measured in the following areas: psycholinguistic skills, as indicated by the Illinois Test of Psycholinguistic Ability; perceptual-motor growth, measured by the Marianne Frostig Test of Visual-Motor Development; intelligence, as measured by the Peabody Picture Vocabulary Test; and achievement of program objectives, as indicated by the Appalachia Preschool Test.

Analysis of the results of these tests indicated that the home visitor played a vital role in reinforcing the objectives taught on the television program. Children who were visited by the paraprofessional showed significantly higher scores on the curriculum specific measure (APT) than did children who watched the television program only, or were not exposed to any of the other components.

Children visited by the paraprofessional also scored significantly higher on a measure of perceptual development, which is thought to be associated with reading readiness. These children also scored significantly higher on a measure of verbal language production.

Analysis of social skills development indicated that the mobile classroom adds to the children's ability to interact successfully in a group situation.

While the children who visit the mobile facility do not show a pattern of consistent cognitive gains when compared with individuals who are being visited by the paraprofessional, the mobile classroom is achieving its primary objective of providing the necessary social skills for personal and scholastic achievement.

Summarizing test data from the three years of field testing, AEL has found that the home visitor probably is the most important part of the program in promoting cognitive growth. In her work with both parent and child, she not only provides a model for the child's speech patterns and encourages his participation in the program activities, but also influences the parent and thus changes the reinforcement contingencies toward more learning experiences in the home.

AEL also has found that the television program in itself provides only the substance for cognitive and affective learning, which is reinforced by the home visitor, and that the mobile classroom provides the social skills necessary for the child's personal development and the opportunity to further his learning in a group situation.

Appalachia Educational Laboratory's home-oriented approach to preschool education has attracted national attention, and requests for information have been received from 47 states, District of Columbia, Canada, Guam, France, Germany, Africa and the Netherlands. Many rural school systems and, surprisingly, a few urban systems see possibilities of using the three-component approach in ghetto areas, and have requested an opportunity to visit the field site area.

This developmental effort was chosen as one of the nation's exemplary programs to be featured at the 1970 White House Conference on Youth. The National Center for Educational Communications chose the program as one of 10 from across the nation to feature in a traveling exhibit of outstanding new developments in education.

The National Broadcasting Company produced for the Department of Health, Education, and Welfare a 30-minute documentary on the program to be distributed nationally, and AEL Director, Benjamin Carmichael appeared on the NBC "Today Show", providing a national audience for the Laboratory program.

The Appalachia Educational Laboratory, by reason of its contract with the U. S. Office of Education, had to conclude its field-testing in May, 1971. The program originally was established as a five-year project: one year for design and preparation; three years for field-testing; and one year for operational testing. Operational testing is conducted by an agency other than AEL but with AEL assistance.

At the time the proposal for this Demonstration was written, no school system was committed to installing the program by the beginning of the school term in the fall of 1971. With continuing requests from all over the country for a chance to view the program first hand, and with the numerous additional requests expected as a result of the traveling exhibits of NCEC, it was imperative that the three-year field test be carried immediately into a demonstration phase in the fall of 1971

This situation led to the following two-part problem:

To provide interested school and community officials from throughout the country an opportunity to see first-hand the operation of a home-oriented preschool education program; and

To evaluate the effectiveness of the home-oriented preschool education program (already designed and field tested by the Appalachia Educational Laboratory) as it is replicated under the auspices of a local school system.

## II. DEMONSTRATION PROCEDURES

### INTRODUCTION

The site of AEL's field test was more than 50 miles from the Laboratory's main office in Charleston, West Virginia. While this was not a great hindrance in conducting visits to the field site, a great deal of time and money was spent in travel and hotel accommodations. It was felt for the purpose of demonstration that it would be better to move the demonstration closer to the home office of AEL so that interested parties could talk to central Laboratory people and visit the demonstration without a great deal of unnecessary traveling.

For this reason the Laboratory contacted school officials of Kanawha County, in which Charleston is located. While Kanawha County operates a modern school system in its urban and semiurban areas, there still are many isolated hollows and small villages in the county which desperately need a program such as the one developed by AEL in order to serve rural isolated children. Kanawha County school officials were enthusiastic in their response to the AEL program and agreed to participate in the demonstration.

A proposal was submitted to the National Center for Educational Communications. This proposal was accepted and funded for the period from June 1, 1971 to May 31, 1972.

Appalachia Educational Laboratory entered into a subcontract with the Kanawha County (West Virginia) Board of Education which provided for the Board to carry on the day-to-day operation of the demonstration with AEL serving in a supportive role. The Scope of Work of the subcontract was as follows:

### SCOPE OF WORK

Conduct a one-year demonstration of the AEL developed Home-Oriented Early Childhood Education Program. The program demonstration will involve 150 children in rural isolated sections of Kanawha County, West Virginia, and consist of:

1. 170 daily TV lessons
2. Use of a mobile classroom facility, which will make weekly visits of approximately one and one-half hours each at locations serving 10 to 15 children each.
3. Weekly home visitation by a paraprofessional teacher to each child enrolled in the program.

A full-time project director, working under the direction of the Kanawha Board of Education, will administer the program and be responsible for demonstrating the effectiveness to visiting school officials. In addition, the project director will maintain a careful record of visitors to the demonstration and will follow up in an active way to assist these visitors with implementing the ECE program in their home areas.



The remainder of this section will describe the implementation of the above Scope of Work.

#### LABORATORY RESPONSIBILITIES

During its three-year field test of the Home-Oriented Preschool Education Program, the Laboratory had produced 340 television lessons, each 30 minutes in length. From this number 170 were selected and made available for use with the demonstration. Selection was made on the basis of both content and technical quality. Some of those selected were also edited to upgrade quality or to remove material no longer applicable or relevant.

Arrangements were made with WHTN-TV, Channel 13, Huntington, West Virginia, to broadcast the lessons for the required 34 weeks of the demonstration. This commercial television station was selected since the use of ETV for such a purpose was not practical. Not more than a few homes received WMUL-TV, Channel 33, the ETV station serving Kanawha County. Many families will not or cannot invest money in the antenna needed to receive this VHF channel.

The printed materials to accompany the television lessons consisted of Parents' Guide, Home Visitor Activities, Mobile Classroom Lesson Plans, Curriculum Planning Guides, and miscellaneous children's materials. All of these were revised to correspond to the selected 170 television lessons. Art work and color were added to make the finished product attractive to potential users.

A custom built mobile classroom, designed by the Laboratory, had been purchased for the field test where it was used for three years. This unit was made available for the demonstration after it was reconditioned.

The Laboratory evaluation staff, in a joint effort with Kanawha County Schools, measured the impact of the program on the children in the demonstration. Section III of this Final Report describes the evaluation procedures and results.

Personnel training was also a joint responsibility of the Laboratory and Kanawha County. Personnel training is described below.

#### BOARD OF EDUCATION RESPONSIBILITIES

The Kanawha County Board of Education employed all demonstration personnel through its regular procedures, and all personnel were employees of the Board. This permitted professional personnel to retain tenure, retirement, and fringe benefits. Paraprofessionals were accorded certain benefits also, including placement on a career ladder.

The financial office of the Board handled all payroll matters, made all purchases, and submitted all invoices to the Laboratory for reimbursement according to the provision of the subcontract.

Office space, facilities and equipment for training purposes, and parking spaces for the mobile classroom were provided by the Board. Day-to-day

operations of the demonstration were supervised by the Board through the Project Director, using its regular supervisory procedures. As previously mentioned, joint responsibilities involved personnel training and project evaluation.

#### PERSONNEL EMPLOYED

By mutual consent of the Laboratory and the Board, Mr. John Barnette, an employee of the Board, was selected to serve as Project Director. Mr. Barnette administered the program and served as liaison person between the Laboratory and Board. He was directly responsible for implementing the visitation aspect of the demonstration by scheduling visits, arranging transportation, and answering questions of officials interested in observing the home-oriented program in operation.

An experienced teacher was selected to conduct group sessions in the mobile classroom. She drove the unit to ten locations per week where she led approximately 15 children per session in activities designed to stimulate social growth and to complement and reinforce concepts presented in the other two aspects of the program: television lessons and home visits. A paraprofessional aide was employed to assist the mobile classroom teacher.

Five paraprofessional home visitors were employed to make weekly visits of approximately 45 minutes each to the homes of children enrolled in the demonstration. During the visits they consulted with parents on methods of reinforcing child learning in the home and delivered materials pertinent to the following week's activities. Home visitors also assisted with the enrollment of children in the demonstration.

#### PERSONNEL TRAINING

A four-phase training program for demonstration personnel was conducted. One week of preservice training, specific to the Home-Oriented Preschool Program was conducted jointly by the Laboratory and Kanawha County's early childhood education staff. This centered around the techniques required to work in a home situation with parent and child, the television lessons and printed materials used in the program, and understanding of the objectives for the program.

In the second phase, the demonstration personnel were included in the Kanawha County kindergarten aide's preservice training. Learning activities (such as games and songs), teaching materials (such as blocks, clothing, counters, and puzzles), and child development in early years provided the thrust for this training.

Thirdly, demonstration personnel were required to observe an on-going kindergarten class with a skilled teacher and aide for one week.

From late September, when the demonstration became operational, until May when it ended, weekly inservice meetings were held. Responsibility for these sessions were shared between Board and Laboratory early childhood staffs. Consultants were brought in for specific training in areas such as art and music.

### STUDENT ENROLLMENT

Ten relatively rural areas of Kanawha County were selected for purposes of the demonstration. From these ten areas 150 three-, four- and five-year-old children were selected to participate. The selection was based solely upon the presence of an eligible child in the home, a television set capable of receiving the lessons to be broadcast over Channel 13, and the desire of the parents to have the child enrolled. No economic guidelines were set.

The sample was composed of 19 children three years old, 41 four years old, and 90 five years old. In January, approximately mid-way of the demonstration, an additional 30 children were added. These children were not included in the evaluation of the demonstration.

### PARENT INVOLVEMENT

Parental involvement beyond the requirements of the demonstration was encouraged. In conjunction with West Virginia University Extension Service, parents were made aware of the availability of information concerning child growth and development, child care, nutrition, and family living. Information on these topics was supplied upon request.

In four of the ten areas served, parents were involved in adult education classes provided by Kanawha County Schools. The community school concept was utilized to provide this enrichment.

### VISITATIONS AND PRESENTATIONS

During the course of the demonstration, there were a series of site visits to the area by interested persons. In addition, both Laboratory and demonstration personnel made a series of presentations to various groups.

Site visits were made by representatives of the following groups or agencies:

- Colleges and Universities
- Publishing Companies
- Intermediate School Districts
- Local School Districts
- Head Start Programs
- Newspapers and Magazines
- U. S. House of Representatives
- State ETV Authorities
- Foundation-Sponsored Projects
- U. S. Office of Child Development
- Parents

These visits were made as a result of personal contacts or of an informational campaign which directed letters to persons or groups in thirty categories. A brochure was prepared and distributed both with the mailings and at various meetings.

Presentations were made to the following groups:

National Association for the Education  
of Young Children  
Minneapolis, Minnesota

Conference on Child Language  
Chicago, Illinois

Kentucky Human Resources Coordinators  
Lexington, Kentucky

Southeast Metropolitan Board of Cooperative  
Services  
Denver, Colorado

Various Senators and Congressmen  
Washington, D. C.

Bureau of Technology, USOE  
Washington, D. C.

Leflore County Schools  
Greenwood, Mississippi

Agency for International Development  
Washington, D. C.

Markle Foundations  
New York City

Parents' Workshops

OCD'S Home Start Conference  
St. Louis, Missouri

Paraprofessional Training Sessions

Elementary-Kindergarten-Nursery-Education  
Association  
Denver, Colorado

During each presentation a mention was made of the demonstration and an invitation to visit was issued. Presentations will be continued by Laboratory personnel beyond the demonstrations period.

#### BEYOND DEMONSTRATION

The demonstration described in this report caused the TV broadcast from Channel 13, WHTN-TV to be received in counties other than the ones designated for the demonstration. Since the TV broadcast was thus assured, Braxton County, West Virginia Schools entered into an agreement with the Laboratory

to conduct the Home-Oriented Preschool Education Program. The Braxton County program served approximately 50 children.

WHTN-TV was also received in Scioto County, Ohio. Beginning in January, 1972 the Scioto County Adult Basic Education Program started to provide Home-Oriented Preschool Education for the children in the same homes at which they were providing Adult Basic Education. Approximately 50 children were involved in this program.

During the course of the summer of 1971, other TV stations agreed to carry "Around the Bend", the preschool television program produced for the demonstration.

WDTV-TV, Channel 5 in Weston, West Virginia served the Wetzel County, West Virginia area in which the Wetzel school system provided a Home-Oriented Preschool Education Program for approximately 50 children.

WSJK-TV, Channel 2 in Knoxville, Tennessee broadcast the program into Campbell, Clayborn, Union, and Hancock Counties, Tennessee and into Dickinson, Scott and Wise Counties in Virginia. The Virginia DILENOWISCO Educational Cooperative provided a Home-Oriented Preschool Education Program for 150 preschool children, while in Tennessee the Clinch-Powell Educational Cooperative provided for 300 preschool children.

WSVA-TV, Channel 3 in Harrisburg, Virginia, broadcast into Pendleton County, West Virginia, where Educational Region III provided a group of 100 preschool children with Home-Oriented Preschool Education as part of a pilot demonstration project.

#### SUMMARY

A demonstration of the AEL Home-Oriented Preschool Education Program was funded by the National Center for Educational Communications for the period from June 1, 1971 to May 30, 1972. This demonstration was held in Kanawha County, West Virginia, with the Board of Education and the Laboratory actively cooperating in its conduct. A total of 180 children took part in the program although only 150 were involved in the evaluation of its effectiveness.

During the course of the demonstration, visits to the site were made by people representing 11 different categories including news media, education, and parents. Presentations on the program were made before 11 organizations or groups.

Following the formation of the demonstration, other agencies contracted with the Laboratory to provide further exposure of the Home-Oriented Preschool Education Program in six other sites.

### III. DEMONSTRATION EVALUATION

#### INTRODUCTION

An evaluation of the Home Oriented Preschool Education Program (HOPE) which was demonstrated in Kanawha County, West Virginia, was performed to determine overall effectiveness and to relate student achievement to areas of program emphasis.

The evaluation procedure involved both normed tests and curriculum specific measures, which were administered before and after intervention, and were compared with a control group which did not receive any treatment as well as with the results of AEL's field test. Data from these measures have been analyzed, and this analysis will be presented in a later section of the report along with the conclusions which were drawn from the analysis.

The primary purpose of the evaluation was to determine the changes which the HOPE Program produced in its target audience. In this sense, the evaluation was completely summative or "pay-off" in nature. Any formative or "context" evaluation which occurred was informal in nature and was conducted by the program staff.

A secondary area of concern in summative evaluation was the parental attitude toward the program. Although the primary target audience was children of preschool age, it was hypothesized that involvement of parents would effect the children's behavior, particularly in their relationship with the para-professional home visitor.

This section of the report will attempt to relate the above variables to the characteristics of the children involved, and to determine the efficiency of the entire effort in attaining its objectives of providing an economical and effective alternative to traditional preschool education.

#### METHOD

All of the approximately 140 children enrolled in the Kanawha County demonstration were tested before the program began operation. This pre-testing occurred in September, 1971 and utilized a battery of tests to assess a broad area of abilities. The tests were administered by specially trained testers who were not otherwise involved in the program.

After the program's completion in June of 1972, the evaluation battery was administered to the 120 children remaining in the program. Trained testers again were responsible for administering all instruments to the children. Additionally, a survey sheet was mailed to participating parents to assess their attitude toward the program in its various aspects.

The sample group consisted of children aged 3, 4, and 5 of both sexes who were residents in Kanawha County. The treatment (and sample) group included more of the 5-year-olds than the other ages. There were 15 3-year-olds enrolled at that time. Both sexes were approximately equal in numbers for both pre and post-test.



The evaluation battery included the Appalachia Preschool Test, a curriculum specific measure based on the objectives taught during the demonstration year, the Peabody Picture Vocabulary Test - a vocabulary based intelligence test, and subtests 2 and 3 of the Marianne Frostig Test of Perceptual Development, which are designed to measure pre-reading skills and readiness.

These tests were administered by individuals trained by AEL, but who were not otherwise involved in the demonstration project. These testers visited the children in their homes and administered the evaluation battery over a two day period. Many of the older children were able to complete the entire battery within two to three hours in a single day of testing.

Pretesting was performed between August 23 and September 3 of 1971. Post-testing was performed from May 15 to June 2 of 1972. Approximately 20 children withdrew from the program between pre and post-tests.

#### PRETEST DATA ANALYSIS

After the tests were scored by the AEL evaluation staff, a three way analysis of variance (ANOVA) procedure was performed using sex, age, and county (treatment vs. control) as the major classifications. The control group data was obtained from the previous year's analysis of the HOPE field test. This control group was of the same age as the treatment group, but were selected in an area where no remedial preschool programs were available. Testing of the control group was performed in September of 1970 and June of 1971.

Additionally, comparisons were made with the "package" group scores from the final year of field testing of the HOPE Program. This group contained the same components as the demonstration sites - that is, a mobile facility, a paraprofessional home visitor, and a daily televised lesson.

The ANOVA procedure revealed many significant differences across the pretest scores, including differences in chronological age. Since all of the other scores (except IQ) increase directly with age, a covariance analysis was performed, using chronological age as the covariate. Table 1 presents the overall means for each variable, along with the numbers of students and the standard deviations for each group. ANOVA and ANCOVA significant levels are also included for each variable. Appendix A presents individual pretest means, standard deviations, and numbers of subjects for individual age by sex cells within the four treatments, while Appendix B presents ANCOVA pretest tables for each variable.

The differences in overall pretest scores which are evident after covariance probably indicate fluctuations in sample characteristics of socioeconomic level of home background, which in turn causes error variance across groups.

Table 1

Overall Pretest Means, Standard Deviations, and Numbers  
of Subjects for Each Variable and Comparison Group -  
Along with Significance Levels for the ANOVA  
and ANCOVA Procedures

	Kanawha County	Field Test	Control	ANOVA	ANCOVA
CA	- x= 55.94 σ= 4.82 N= 138	- x= 50.46 σ= 5.01 N= 63	- x= 51.27 σ= 4.71 N= 61	p<01	
Frostig 2	- x= 6.56 σ= 4.80 N= 138	- x= 4.41 σ= 4.51 N= 63	- x= 5.43 σ= 5.08 N= 61	p<01	p<05
Frostig 3	- x= 2.12 σ= 2.32 N= 138	- x= 3.27 σ= 2.90 N= 63	- x= 2.79 σ= 2.60 N= 61	p<01	p<05
PPVT RS	- x= 45.97 σ= 9.38 N= 138	- x= 41.09 σ= N= 63	- x= 40.83 σ= 8.67 N= 61	p<01	p<05
PPVT MA	- x= 227.13 σ= 12.42 N= 138	- x= NA* σ= N= 63	- x= NA* σ= N= 61		
PPVT IQ	- x= 98.92 σ= 14.92 N= 138	- x= 96.34 σ= 14.55 N= 63	- x= 94.47 σ= 15.73 N= 61		
APT 2	- x= 29.28 σ= 7.47 N= 136	- x= 26.19 σ= 6.97 N= 63	- x= 26.27 σ= 6.42 N= 61	p<01	p<01
APT Int.	- x= 7.11 σ= 1.64 N= 136	- x= 7.18 σ= 1.43 N= 63	- x= 7.07 σ= 1.67 N= 61		
APT 5	- x= 7.91 σ= 2.98 N= 136	- x= 8.18 σ= 3.16 N= 63	- x= 8.27 σ= 3.44 N= 61	p<01	p<05
APT 6	- x= 29.57 σ= 8.52 N= 136	- x= NA* σ= N=	- x= NA* σ= N=		
APT Total	- x= 89.17 σ= 21.15 N= 136	- x= 91.17 σ= 24.08 N= 63	- x= 82.30 σ= 21.22 N= 61	p<01	p<05

\*Not Available



### POST-TEST DATA ANALYSIS

Analysis of post-test data was performed in August of 1972, comparing scores on the evaluation battery across the same classification as were used in the pretest analysis (demonstration vs. control and field test). Although the same battery of tests was administered, the curriculum specific measure (APT) was revised in format between pre and post-test. In the pre-test, items were grouped by their correspondence to program development. Thus, part 2 of the APT corresponded to the first year's program objectives and included a variety of types of items.

The revised APT used all of the same items as the original version, but grouped these items by content areas. Thus, although comparisons of the total score are possible between pre and post-test, individual subtests on the APT cannot be compared on a pre-post basis. Additionally, the field test and control group data do not include the classification of APT items by type, so only total scores can be included in any analysis.

Since some pretest differences were found to be significant after covariance on pretest chronological age, the post-test analysis utilized all variables on pretest which were significant after covariance of chronological age as covariates for post-test analyses.

Essentially, then, the primary statistical inference method was an analysis of covariance on post-test scores, using two comparison groups along with the Kanawha County data. The variables which were compared across all three groups were: subtests 2 and 3 of the Frostig, the PPVT raw score, mental age and IQ, and the APT total score. Subtest scores of the APT could not be included in post-test analysis because no comparison data was available on the individual subtests.

### RESULTS OF POST-TEST ANALYSIS

Table 2 below indicates the overall post-test means for each of the major variables in the evaluation battery by treatment group. Also, the probability levels from the ANCOVA are included to indicate the significance of the differences across means for each variable.

Table 2

Post-test Overall Means, Standard Deviations,  
Numbers of Subjects, and P Levels for ANCOVA

	Kanawha County	Field Test	Control	P
CA	- x= 63.01 σ= 4.97 N= 119	- x= 62.47 σ= 3.88 N= 95	- x= 59.00 σ= 4.43 N= 109	p>05
Frostig 2	- x= 9.90 σ= 4.35 N= 119	- x= 10.09 σ= 4.91 N= 95	- x= 8.62 σ= 4.77 N= 105	p>01

Table 2 (continued)

	Kanawha County	Field Test	Control	P
Frostig 3	- x= 6.05 σ= 3.36 N= 119	- x= 5.82 σ= 3.07 N= 95	- x= 4.91 σ= 3.45 N= 95	p<05
PPVT RS	- x= 51.83 σ= 8.50 N= 118	- x= 52.45 σ= 7.84 N= 95	- x= 45.94 σ= 8.60 N= 105	NS
PPVT MA	- x= 66.97 σ= 11.73 N= 118	- x= NA* σ= NA* N= NA*	- x= NA* σ= NA* N= NA*	
PPVT IQ	- x= 102.93 σ= 16.69 N= 118	- x= 104.53 σ= 14.44 N= 95	- x= 96.63 σ= 15.44 N= 105	NS
APT Total	- x= 105.13 σ= 20.41 N= 119	- x= 101.23 σ= 24.17 N= 95	- x= 87.22 σ= 25.08 N= 105	p<01

\*Not Available

Appendix C lists individual age by sex and treatment cell post-test means for these variables, while Appendix D summarizes the ANCOVA post-test tables for each variable.

As Table 2 indicates, on the Frostig subtest 2, the Kanawha County group scored within .15 point of the package group, a difference which was not statistically significant. The control group scored significantly below the package and Kanawha County groups, indicating that AEL's program produced a substantial effect in figure-ground discrimination.

A similar pattern is evident for subtest 3 of the Frostig, where the Kanawha County sample scored slightly above the package group, and both of these scored well above the control group. Here again the three elements of the program serve to facilitate perceptual-motor development, particularly in pre-reading skills.

The differences which are evident across groups in Peabody raw score and IQ are not statistically significant. It is of interest that none of the groups scored below the national norms, a finding which runs contrary to popular notions about the intellectual deprivation which is supposed to be common in Appalachia.

The total scores for the Kanawha County group on APT reflects a significant gain over the control group, and are comparable to the results of the last year's field test. This finding is made even more significant by the fact that the field test site data reflects three years of exposure to the

program for the 5-year-old children, and two years of experience for the 4-year-olds. Thus, in one year, children in the Kanawha County area have gained the same objectives which took considerably longer to acquire in the field test area.

Thus, it can be seen that the program demonstration in Kanawha County was able to meet the same levels of success in teaching specific program objectives as were met with the final and cumulative year of program development.

Additionally, a survey of parent's attitude and assessment of the program effects were conducted by the project staff. Parents were overwhelmingly in favor of the program, with less than ten per cent of all the responses being unfavorable. A listing of the mean ratings for each of the individual questions appears below. The rating scale ran from 1, meaning "of no help" to 3, meaning "of great help."

<u>Total Response</u>	<u>Total Point Response</u>	<u>Mean Response</u>	
92	247	2.7	1. Giving you a better understanding of what Early Childhood Education is trying to do for your child?
91	240	2.6	2. Gaining a positive attitude toward education and school?
92	232	2.5	3. Giving you opportunities to talk with your child's preschool teacher?
92	245	2.7	4. Learning how to make effective use of educational activities (toys, games, puzzles, etc.) with preschool children at home?
92	242	2.6	5. Making you feel a part of the program?
92	207	2.3	6. Giving you information needed in rearing children?
92	231	2.5	7. Giving you a better understanding of your child's interests and needs?
92	250	2.7	8. Improving your child's liking for school?
89	223	2.5	9. Improving your child's listening habits?
92	231	2.5	10. Improving your child's ability to play and mix well with other children?

<u>Total Response</u>	<u>Total Point Response</u>	<u>Mean Response</u>	
90	196	2.2	11. Improving your child's manners?
91	203	2.2	12. Increasing your child's interest in some cultural area such as music, art, or visiting a museum?
91	147	1.6	13. Improving your child's eating habits?

#### SUMMARY AND CONCLUSIONS

To provide an indication of the overall effects of the demonstration of AEL's Home Oriented Preschool Education Program, an evaluation battery of three tests was administered before and after program implementation to a sample of 150 children. These tests covered the areas of verbal intelligence (Peabody), perceptual development (Frostig), and overall achievement of objectives (Appalachia Preschool Test). Data from pre and post-tests were compared with a control group (no intervention) and with the final results from AEL's field test site.

Data analysis showed that although the demonstration did not produce significant changes in verbal IQ in comparison with the control group, such changes were obtained in the areas of pre-reading skills and in overall achievement of program objectives. In all areas, the Kanawha County group scored as well as the field test site, a group which had considerably more exposure to learning opportunities. This indicates that comparable results are obtainable when an agency other than the Laboratory replicates this program.

These results, along with the highly positive attitude of parents involved in the program, and the favorable assessment of changes in their children's behavior resulting from the program, serve to indicate that the demonstration was highly successful in meeting its goals.

# APPENDIX A

## Individual Cell Means

### Pretest Only

CA

Kanawha				Package			Control		
N		$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 5	39.60	1.52						
	F 10	38.10	2.08						
4	M 17	48.00	3.55						
	F 20	47.15	3.50						
5	M 46	61.89	5.79						
	F 40	62.40	5.35						

Frostig 2

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	0.33	0.57	10	0.50	0.67	8	1.50	2.55
	F 5	0.08	0.84	11	1.81	1.75	8	2.12	2.52
4	M 16	1.38	1.54	9	3.25	3.69	13	4.15	5.01
	F 19	2.89	3.13	9	2.75	4.17	13	4.62	5.72
5	M 45	7.93	5.45	13	7.92	6.30	9	8.67	6.14
	F 36	10.39	5.98	11	8.72	6.42	10	11.00	6.18

Frostig 3

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	0.33	0.58	10	0.20	0.40	8	1.75	1.56
	F 5	1.00	1.73	11	2.00	1.90	8	1.38	1.49
4	M 16	1.38	1.89	9	3.50	3.20	13	3.15	2.47
	F 19	1.21	1.90	9	4.50	3.16	13	2.92	2.40
5	M 45	3.40	2.85	13	3.54	3.20	9	2.00	1.73
	F 19	1.21	1.90	11	5.81	4.00	10	4.80	4.39

PPVT RS

Kanawha			Package				Control		
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 5	38.20	11.88	10	26.20	9.17	8	36.13	8.07
	F 10	30.00	9.73	11	35.18	9.77	8	32.25	9.69
4	M 17	39.65	9.28	9	42.63	6.55	13	42.23	10.51
	F 20	41.40	9.47	9	42.63	9.88	13	37.31	7.72
5	M 46	50.83	8.54	13	50.38	8.23	9	45.89	8.37
	F 40	50.35	8.87	11	47.09	9.43	10	49.70	6.88

## PPVT MA

Kanawha					Package			Control		
N			$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	5	47.40	12.90						
	F	10	37.70	9.97						
4	M	17	49.24	11.87						
	F	20	50.55	12.48						
5	M	46	64.41	13.54						
	F	40	61.40	11.73						

## PPVT IQ

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 5	104.80	18.79	10	84.33	17.06	8	104.13	15.10
	F 10	96.20	16.88	11	99.81	15.27	8	95.75	16.51
4	M 17	97.71	12.35	9	97.63	9.40	13	96.69	15.02
	F 20	102.20	15.23	9	101.63	14.25	13	87.46	15.89
5	M 46	99.61	15.00	13	99.38	12.20	9	92.33	100.50
	F 40	97.18	13.52	11	94.82	17.32	10	93.90	16.24

APT Part 2

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 5	17.40	10.67	10	22.70	8.63	8	21.88	4.17
	F 10	20.40	6.85	11	22.09	5.82	8	23.57	3.50
4	M 17	23.53	9.17	9	25.75	5.12	13	24.15	5.97
	F 20	22.90	6.81	9	25.13	7.51	13	26.46	5.24
5	M 44	31.23	6.91	13	33.23	8.03	9	27.56	6.74
	F 40	36.48	7.24	11	32.27	7.89	10	33.30	8.45

Interview

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 5	5.40	2.41	10	6.40	1.91	8	5.50	2.23
	F 10	6.10	2.13	11	6.58	1.38	8	7.00	1.51
4	M 17	6.76	1.52	9	6.89	2.03	13	6.77	1.36
	F 20	5.90	2.43	9	8.00	0.87	13	7.60	1.45
5	M 44	7.30	1.47	13	7.85	1.34	9	8.11	1.54
	F 40	8.13	0.97	11	7.73	1.79	10	7.90	1.10



APT Part 5

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 5	3.60	3.36	10	4.90	3.39	8	5.63	2.69
	F 10	6.50	4.30	11	7.00	2.12	8	7.29	3.10
4	M 17	6.24	2.31	9	9.00	3.76	13	7.23	3.72
	F 20	5.85	2.72	9	9.44	2.92	13	7.92	3.09
5	M 44	8.93	2.71	13	10.07	2.63	9	9.22	2.77
	F 40	9.45	3.19	11	9.90	4.83	10	12.10	3.57

APT Total 2

Kanawha				Package			Control		
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 0	0	0						
	F 0	0	0						
4	M 0	0	0						
	F 0	0	0						
5	M 0	0	0						
	F 0	0	0						

APT Part 6

Kanawha					Package			Control		
N			$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	5	14.60	8.53						
	F	10	20.10	5.84						
4	M	17	22.00	7.08						
	F	20	22.25	9.73						
5	M	44	32.95	8.09						
	F	40	36.98	9.41						

APT Total 3

Kanawha			Package			Control			
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 0	0	0						
	F 0	0	0						
4	M 0	0	0						
	F 0	0	0						
5	M 0	0	0						
	F 0	0	0						

# APPENDIX B

## ANCOVA

### Tables for Pretest Variables

#### Frostig 2

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	98.35	4.88	0.0261
COUNTY	3	597.19	9.87	0.0001
SEX*COUNTY	3	2.22	0.04	0.9900
CA	1	5397.22	267.55	0.0001

#### Frostig 3

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	45.44	3.60	0.0551
COUNTY	3	858.05	22.69	0.0001
SEX*COUNTY	3	27.84	0.73	0.5340
CA	1	909.03	72.11	0.0001

#### PPVT RS

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	56.71	0.62	0.5649
COUNTY	3	2129.99	7.84	0.0001
SEX*COUNTY	3	654.08	2.41	0.0655
CA	1	13218.28	145.98	0.0001

#### PPVT MA

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	9.50	0.053	0.8120
COUNTY	3	3710.29	6.98	0.0003
SEX*COUNTY	3	1248.08	2.35	0.0708
CA	1	23076.51	130.29	0.0001

# ANCOVA

## Tables for Pretest Variables

### PPVT IQ

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	65.02	0.24	0.6314
COUNTY	3	14119.53	17.26	0.0001
SEX*COUNTY	3	868.75	1.06	0.3656
CA	1	1097.92	4.03	0.0427

### APT Part 2

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	412.87	6.89	0.0089
COUNTY	3	2882.50	16.04	0.0001
SEX*COUNTY	3	548.90	3.05	0.0278
CA	1	7747.05	129.32	0.0001

### Interview

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	7.33	2.63	0.1014
COUNTY	3	42.75	5.11	0.0021
SEX*COUNTY	3	3.88	0.46	0.7115
CA	1	130.75	46.93	0.0001

### APT Part 5

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
SEX	1	33.68	3.87	0.0468
COUNTY	3	31.07	1.19	0.3125
SEX*COUNTY	3	56.26	2.16	0.0912
CA	1	1246.66	143.37	0.0001

# APPENDIX C

## Post-Test Cell Means by Variables

Post-test only

Kanawha			Package			Control			
CA									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	47.33	1.53	12	41.67	2.43	17	39.00	4.06
	F 9	45.56	1.81	13	41.15	2.21	19	39.53	4.32
4	M 15	55.53	3.27	20	52.35	3.48	19	50.11	4.83
	F 17	53.94	3.85	19	53.00	4.03	20	49.40	4.54
5	M 39	69.18	5.75	16	54.13	4.03	18	62.17	4.92
	F 36	69.42	5.78	15	64.33	5.72	16	62.13	3.73

Kanawha			Package			Control			
Frostig 2									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	4.00	3.00	12	3.50	2.96	17	3.82	3.01
	F 9	3.56	2.83	13	5.92	3.97	19	4.53	3.95
4	M 15	4.60	2.26	20	9.75	4.77	17	7.32	5.55
	F 17	6.52	4.95	19	10.74	6.38	17	9.55	5.01
5	M 39	13.00	4.68	16	15.00	5.01	18	12.50	5.70
	F 36	12.44	4.94	15	13.27	4.86	15	13.75	4.89

Kanawha			Package			Control				
Frostig 3										
N			$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	3	2.67	1.15	12	2.50	2.60	17	2.94	1.86
	F	9	3.44	2.79	13	4.85	3.21	19	1.89	2.48
4	M	15	3.60	3.27	20	6.05	3.25	17	3.00	2.27
	F	17	4.12	3.30	19	8.58	3.69	17	3.50	2.14
5	M	39	7.69	3.73	16	10.13	3.62	18	4.56	3.50
	F	36	7.14	3.24	15	7.80	3.78	15	5.56	3.21

Kanawha				Package			Control			
PPVTRS										
N				$\bar{x}$	SD	N	$\bar{x}$	SD		
3	M	3	47.33	12.58	12	45.50	7.95	17	38.53	9.95
	F	9	44.00	7.76	13	44.54	6.44	19	35.95	10.63
4	M	15	49.53	6.05	20	54.50	7.77	17	48.82	9.36
	F	17	44.53	8.21	19	52.37	8.82	19	44.42	6.54
5	M	39	55.95	8.62	16	61.38	8.75	18	55.50	4.87
	F	35	54.20	9.14	15	52.73	6.48	15	54.20	8.95

Kanawha				Package			Control		
PPVTMA									
N		$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	60.67	19.50						
	F 9	53.67	12.16						
4	M 15	62.07	10.92						
	F 17	53.29	11.12						
5	M 39	74.36	15.91						
	F 35	71.46							

Kanawha			Package				Control			
PPVTIQ										
N			$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	3	109.00	21.66	12	104.00	13.56	17	96.29	13.65
	F	9	107.00	14.04	13	102.85	13.28	19	90.21	16.20
4	M	15	105.80	12.66	20	109.35	12.97	17	100.88	18.94
	F	17	98.59	13.97	19	103.63	15.88	19	94.53	12.61
5	M	39	104.92	16.36	16	112.25	16.23	18	100.50	10.40
	F	35	100.03	19.66	15	92.87	13.99	15	98.33	19.69

Kanawha			Package			Control			
APTPT2									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M			12	32.42	10.53	17	24.00	6.31
	F			13	32.85	9.22	19	24.74	9.17
4	M			20	40.75	8.36	17	29.37	8.45
	F			19	41.47	6.99	17	26.85	7.03
5	M			16	48.69	8.58	18	34.25	9.55
	F			15	44.47	7.86	15	40.75	7.14

Kanawha			Package			Control				
INTRVW										
N			$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	3	7.33	2.08	12	7.83	0.97	17	6.71	1.87
	F	9	5.56	3.21	13	7.62	1.00	19	7.26	1.80
4	M	15	6.93	1.91	20	7.95	1.24	17	7.60	1.45
	F	17	7.00	2.57	19	8.32	1.34	17	7.25	1.22
5	M	39	7.49	1.50	16	9.06	1.52	18	8.00	1.33
	F	36	8.36	1.25	15	8.33	1.66	15	8.25	1.40



Kanawha			Package			Control			
APTPT6									
N		$\bar{x}$	SD	N		$\bar{x}$	SD		
3	M			12	32.42	11.54	17	20.82	8.17
	F			13	36.38	8.18	19	22.21	10.94
4	M			20	40.85	12.32	17	25.68	9.88
	F			19	45.58	50.94	17	28.20	9.11
5	M			16	50.94	6.70	18	33.78	8.46
	F			15	47.53	9.18	15	40.75	7.11

Kanawha			Package			Control			
APTPT5									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M			12	10.17	4.52	17	6.54	2.09
	F			13	9.92	3.20	19	6.95	3.33
4	M			20	13.95	9.47	17	8.32	3.27
	F			19	13.53	3.10	17	7.30	3.16
5	M			16	15.81	5.56	18	10.44	2.45
	F			15	14.33	4.08	15	11.88	3.20

Kanawha			Package			Control			
APTGEOM									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	3.00	1.00						
	F 9	4.00	1.32						
4	M 15	4.53	1.46						
	F 17	4.59	1.06						
5	M 39	4.92	1.11						
	F 36	29.89	5.22						

Kanawha				Package			Control		
APTVOC									
N		$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	21.33	2.31						
	F 9	22.78	3.38						
4	M 14	24.27	5.35						
	F 17	24.00	4.37						
5	M 39	29.05	4.67						
	F 36	29.89	5.22						

Kanawha				Package			Control		
APTNUM									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	12.67	2.89						
	F 9	19.78	6.82						
4	M 15	23.00	7.64						
	F 17	18.06	9.47						
5	M 39	29.69	4.70						
	F 36	31.14	5.87						

Kanawha				Package			Control		
APTLTRPH									
	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	5.33	2.08						
	F 9	10.33	6.32						
4	M 15	9.93	5.36						
	F 17	9.12	7.03						
5	M 39	14.69	6.25						
	F 36	16.67	8.40						

Kanawha				Package			Control	
APTDISCR								
N				$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	3	11.33	1.15				
	F	9	10.89	2.62				
4	M	15	13.87	2.20				
	F	17	12.71	3.39				
5	M	39	15.79	2.65				
	F	36	16.06	2.62				

Kanawha				Package			Control		
APTGENRL									
N		$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M 3	10.33	2.08						
	F 9	8.89	1.62						
4	M 15	10.67	2.29						
	F 17	9.41	3.20						
5	M 39	12.79	2.66						
	F 36	12.50	2.83						

Kanawha				Package			Control		
APTTOT1									
N				$\bar{x}$	SD	N	$\bar{x}$	SD	
3	M	3	64.00	5.20					
	F	9	76.67	15.38					
4	M	15	86.27	17.82					
	F	17	9.41	3.20					
5	M	39	107.26	17.41					
	F	36	12.50	2.83					

Kanawha			Package			Control				
APTTGTOT										
N			$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD
3	M	3	71.33	6.11						
	F	9	82.22	16.76						
4	M	15	93.20	17.71						
	F	17	83.12	25.77						
5	M	39	114.74	17.48						
	F	36	118.64	22.99						

# APPENDIX D

## ANCOVA

### Tables for Post-test Variables

#### Frostig 2

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
GROUP	2	148.99	4.43	0.0131
SEX	1	1.61	0.09	0.7554
GROUP*SEX	2	54.90	1.63	0.1963
CA	1	2322.81	138.20	0.0001
FROSTIG 3	1	451.74	26.88	0.0001
PPVT IQ	1	260.79	15.52	0.0003
APT Part 2	1	122.23	7.27	0.0076

#### Frostig 3

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
GROUP	2	135.18	36.13	0.0001
SEX	1	1.36	0.73	0.6008
GROUP*SEX	2	4.43	1.18	0.3080
CA	1	141.87	75.84	0.0001
FROSTIG 3	1	18.51	9.89	0.0023
PPVT IQ	1	42.58	22.76	0.0001
APT Part 2	1	1.04	0.55	0.5355

#### PPVT RS

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
GROUP	2	1535.83	16.66	0.0001
SEX	1	380.98	8.26	0.0048
GROUP*SEX	2	45.53	0.49	0.6170
CA	1	4569.10	99.10	0.0001
FROSTIG 3	1	446.88	9.69	0.0025
PPVT IQ	1	3204.99	69.51	0.0001
APT Part 2	1	137.14	2.97	0.0824

ANCOVA

Tables for Post-test Variables

PPVT MA

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
GROUP	2	3853.17	15.34	0.0001
SEX	1	1667.39	13.27	0.0006
GROUP*SEX	2	300.68	1.20	0.3041
CA	1	14404.95	114.73	0.0001
FROSTIG 3	1	1705.91	13.59	0.0006
PPVT IQ	1	8834.14	70.36	0.0001
APT Part 2	1	860.38	6.85	0.0094

PPVT IQ

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
GROUP	2	726.83	2.14	0.1186
SEX	1	934.03	5.50	0.0190
GROUP*SEX	2	172.42	0.51	0.6087
CA	1	199.53	1.17	0.2796
FROSTIG 3	1	2340.04	13.77	0.0005
PPVT IQ	1	13121.33	77.22	0.0001
APT Part 2	1	930.78	5.48	0.0192

APT TOTAL

<u>Source</u>	<u>d.f.</u>	<u>Sequential SS</u>	<u>F Value</u>	<u>Prob &gt; F</u>
GROUP	2	36717.19	81.27	0.0001
SEX	1	176.59	0.78	0.6185
GROUP*SEX	2	392.57	0.87	0.5759
CA	1	36604.50	162.04	0.0001
FROSTIG 3	1	13692.65	60.61	0.0001
PPVT IQ	1	17153.86	75.94	0.0001
APT Part 2	1	2793.29	12.37	0.0009